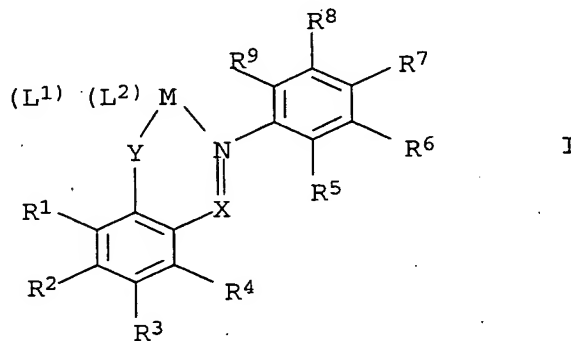


We claim:

1. A process for preparing aqueous polymer dispersions by polymerizing one or more olefins in an aqueous medium in the presence of dispersants and, if desired, of organic solvents which comprises catalyzing the polymerization of said olefin(s) using one or more metal complex compounds of the formula I



where the substituents and indices have the following meanings:

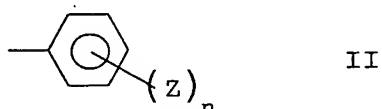
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|----|----------------|--|
| 25 | M | is a transition metal from groups 7 to 10 of the periodic table of the elements, |
| 30 | L ¹ | denotes phosphanes (R ¹⁶) _x PH _{3-x} or amines (R ¹⁶) _x NH _{3-x} with identical or different radicals R ¹⁶ , ethers (R ¹⁶) ₂ O, H ₂ O, alcohols (R ¹⁶)OH, pyridine, pyridine derivatives of the formula C ₅ H _{5-x} (R ¹⁶) _x N, CO, C ₁ -C ₁₂ alkyl nitriles, C ₆ -C ₁₄ aryl nitriles or ethylenically unsaturated double bond systems, x denoting an integer from 0 to 3, |
| 40 | L ² | denotes halide ions, amide ions (R ¹⁶) _h NH _{2-h} , h denoting an integer from 0 to 2, and also C ₁ -C ₆ alkyl anions, allyl anions, benzyl anions or aryl anions, |
- it being possible for L¹ and L² to be linked to one another by one or more covalent bonds,

- X: is CR or nitrogen atom (N)
- R: is hydrogen,
 C₁-C₆ alkyl groups,
 5 C₇-C₁₃ aralkyl radicals or
 C₆-C₁₄ aryl groups, unsubstituted or substituted
 by one or more C₁-C₁₂ alkyl groups, halogens,
 mono- or polyhalogenated C₁-C₁₂ alkyl groups,
 C₁-C₁₂ alkoxy groups, silyloxy groups
 10 OSiR¹¹R¹²R¹³, amino groups NR¹⁴R¹⁵ or C₁-C₁₂
 thioether groups,
- Y: is OH group, oxygen, sulfur, N-R¹⁰ or P-R¹⁰,
- 15 N: is nitrogen atom
- R¹ to R⁹: are independently of one another
 hydrogen,
 C₁-C₁₂ alkyl, it being possible for the alkyl
 20 groups to be branched or unbranched,
 C₁-C₁₂ alkyl substituted one or more times by
 identical or different substituents selected
 from C₁-C₁₂ alkyl groups, halogens, C₁-C₁₂
 alkoxy groups and C₁-C₁₂ thioether groups,
 25 C₇-C₁₃ aralkyl,
 C₃-C₁₂ cycloalkyl,
 C₃-C₁₂ cycloalkyl substituted one or more times
 by identical or different substituents selected
 from C₁-C₁₂ alkyl groups, halogens, C₁-C₁₂
 30 alkoxy groups and C₁-C₁₂ thioether groups,
 C₆-C₁₄ aryl,
 C₆-C₁₄ aryl substituted by identical or
 different substituents selected from one or
 more C₁-C₁₂ alkyl groups, halogens, mono- or
 35 polyhalogenated C₁-C₁₂ alkyl groups, C₁-C₁₂
 alkoxy groups, silyloxy groups OSiR¹¹R¹²R¹³,
 amino groups NR¹⁴R¹⁵ and C₁-C₁₂ thioether
 groups,
 C₁-C₁₂ alkoxy groups,
 40 silyloxy groups OSiR¹¹R¹²R¹³,
 halogens,
 NO₂ groups or
 amino groups NR¹⁴R¹⁵,
 it being possible in each case for two adjacent
 45 radicals R¹ to R⁹ to form with one another a
 saturated or unsaturated 5- to 8-membered ring,

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R¹⁰ to R¹⁶ independently of one another are
hydrogen,
C₁-C₂₀ alkyl groups, which may be substituted in
turn by O(C₁-C₆ alkyl) or N(C₁-C₆ alkyl)₂
groups,
C₃-C₁₂ cycloalkyl groups,
C₇-C₁₃ aralkyl radicals or C₆-C₁₄ aryl groups,

at least one of the radicals R¹ to R⁹ necessarily being in the
form of a radical of the formula II below



where Z is an electron-withdrawing group and n is an integer
from 1 to 5.

2. A process as claimed in claim 1, wherein Z in formula II is
one of the following electron-withdrawing radicals:

NO₂, SO₃, F, C_mF_{2m+1} where m is an integer from 1 to 10,
or a mono- or polyfluorinated aryl.

3. A process as claimed in either of claims 1 or 2, wherein Z in
the formula II is CF₃ and n is 2 or 3.

4. A process as claimed in any of claims 1 to 3, wherein the
metal complex compound is used in combination with an
activator.

5. A process as claimed in any of claims 1 to 4, wherein M in
the formula I is nickel or palladium.

6. A process as claimed in any of claims 1 to 5, wherein
ethylene is used exclusively as olefin.

7. A process as claimed in any of claims 1 to 5, wherein at
least two olefins are used selected from the group consisting
of ethylene, propylene, 1-butene, 1-hexene, and styrene.

8. A process as claimed in claim 6, wherein ethylene is used in
combination with propylene, 1-butene, 1-hexene or styrene.

9. A process as claimed in any of claims 1 to 8, wherein anionic, cationic and/or nonionic emulsifiers are used as dispersants.
10. A process as claimed in any of claims 1 to 9, wherein aliphatic and aromatic hydrocarbons, fatty alcohols or fatty acid are used as organic solvents.
11. An aqueous dispersion of a polyolefin or copolymer of two or more olefins, obtainable by a process as claimed in any of claims 1 to 10.
12. An aqueous dispersion of a polyethylene or copolymer of ethylene obtainable by a process as claimed in any of claims 1 to 10.
13. An aqueous dispersion as claimed in claim 11 or 12 in the form of a miniemulsion.
14. The use of an aqueous dispersion as claimed in any of claims 11 to 13 for paper applications such as paper coating or surface sizing, paints and varnishes, adhesive base materials, molded foams such as mattresses, textile and leather applications, carpet-backing coatings or pharmaceutical applications.

Preparation of aqueous polymer dispersions

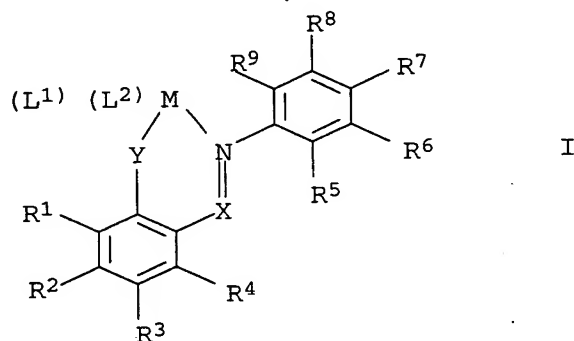
Abstract

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A process for preparing aqueous polymer dispersions by polymerizing one or more olefins in an aqueous medium in the presence of dispersants and, if desired, of organic solvents comprises catalyzing the polymerization of said olefin(s) using
 10 one or more metal complex compounds of the formula I

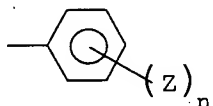
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where at least one of the radicals R^1 to R^9 is necessarily in the form of a radical of the formula II below

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30 where Z is an electron-withdrawing group and n is an integer from 1 to 5.

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